Washington State Department of Transportation

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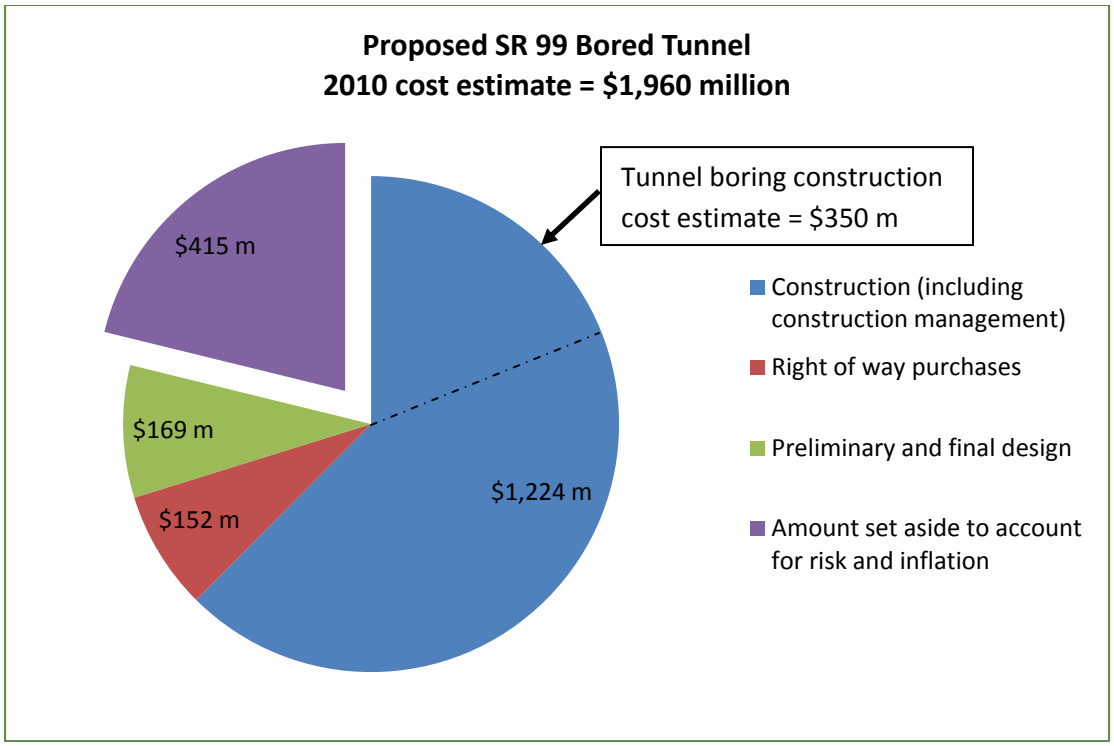
Alaskan Way Viaduct Replacement Costs

Understanding the risk

Replacing the Alaskan Way Viaduct will be a significant construction program, and there is concern that the program's size could lead to significant cost overruns. But the estimated cost to bore the proposed tunnel, which many identify as the riskiest element, is a small proportion of the replacement's overall estimated cost of $3.1 billion.

Tunnel cost estimate

The proposed bored tunnel – the largest of the viaduct replacement projects – is estimated to cost $1.96 billion. Since the project's January 2009 announcement, this estimate has been revised based on more advanced engineering plans for the tunnel; extensive analysis of soils and buildings along the proposed route; and the involvement of a number of highly-qualified independent experts and cost estimators experienced in tunnels, underground construction and megaproject delivery.



Risk of tunnel cost overruns

While the proposed tunnel would be significant endeavor, not all of the estimated costs associated with it carry the same level of risk. For example, boring the tunnel entails more risk than building the roadway and installing the systems inside of it. The estimated cost to construct the proposed bored tunnel, including purchase of the tunnel boring machine, excavating the tunnel, lining the tunnel with concrete, and the labor involved, is $350 million (not including risk and inflation).

Proposed SR 99 bored tunnel Example construction items	Cost estimate (millions)
Tunnel boring	$350
Cut-and-cover sections at north and south ends of tunnel	$180
Double-deck roadway, including travel lanes, shoulders, and pedestrian refuge areas	$100
Tunnel systems, including fire/life safety, ventilation, electrical, mechanical, and lighting	$180
Two tunnel operations buildings, one at each end of the tunnel	$60
Tunnel settlement mitigation (buildings, utilities, streets)	$60

Note: The cost of the design/build contract is estimated between $1 billion and $1.2 billion.

Potential cost overruns on large projects are a concern. That is why WSDOT developed the internationally recognized Cost Estimate Validation Process (CEVP®) in 2002. CEVP® uses outside experts to help establish a "base cost" for a project and to identify and quantify risks and opportunities that may add to or subtract from the base cost. CEVP® can establish a more realistic budget at the early stages of a project and identify risks, opportunities and issues that need to be actively managed.

If the construction costs of the bored tunnel experience the average 28 percent cost overrun for mega-projects found in Oxford professor Bent Flyvbjerg's 2002 report, the potential for cost overruns would be $98 million (28 percent of $350 million). This amount would be well within the $415 million for risk and inflation included in the project.

For more information about the Alaskan Way Viaduct and Seawall Replacement Program, visit www.alaskanwayviaduct.org.